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Notice of Allowability	Application No.	Applicant(s)	
	10/712,567	KIM ET AL.	
	Examiner	Art Unit	
	LUN-YI LAO	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed on 11/13/2003.
2. ☒ The allowed claim(s) is/are 1-29.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

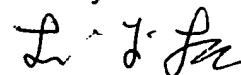
4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>3/31/2005</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Lun-Yi Lao
Primary Examiner



DETAILED ACTION

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yokouchi et al(5,323,171) teach an LCD display system comprising a source voltage circuit and a boosting dropping circuit(2).

Endo et al(6,898,096) teach an LCD display system comprising a drive voltage generation circuit(230) for generating V_{SEGH} , V_{SEGL} , V_{COMH} and V_{COML} .

Lee(US 20040095342) teaches an LCD display system comprising booster(402) for generating common voltage(V_{com}), gate voltage(V_{on} , V_{off}) and source voltage.

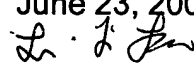
2. The following is an examiner's statement of reasons for allowance.

None of cited reference teach a first common voltage generating unit which drives a common voltage of the STN LCD panel in response to the external voltage, a ground voltage, and the first segment voltage(applied to a column line) and generates a first common voltage(applied to a row line), the voltage level of which is higher than the voltage level of the first segment voltage, using a predetermined resistance ratio; and a second common voltage generating unit which drives a common voltage of the STN LCD panel in response to the external voltage, the ground voltage, and the first segment voltage and generates a second common voltage, the voltage level of which is lower than the voltage level of the first segment voltage, using a predetermined resistance ratio.

None of cited reference teach a first common voltage generating unit which drives a common electrode of the STN LCD panel in response to a ground voltage and the second segment voltage(applied to a column line) and generates a first common voltage having a voltage level that is M (where M is an integer) times the difference of the voltage level of the ground voltage from the voltage level of the second segment voltage; and a second common voltage generating unit which drives a common electrode of the STN panel in response to the ground voltage and the second segment voltage and generates a second common voltage having a voltage level that is $1/M$ (where M is an integer) times the difference of the voltage level of the ground voltage from the voltage level of the second segment voltage.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi, Lao whose telephone number is (571) 272-7671.

June 23, 2006

Lun-yi Lao
Primary Examiner